

Claims:

For the convenience of the Examiner, all pending claims of the present Application are shown below.

Listing of Claims:

1. (Currently Amended) A method for preventing formation of sludge in a subsurface cavity having particulate laden fluid disposed therein, comprising:  
positioning a downhole device having a fluid agitator via a well bore into the fluid of the subsurface cavity, the subsurface cavity having a transverse dimension greater than a transverse dimension of the well bore; and  
agitating the fluid using the fluid agitator.
2. (Original) The method of Claim 1, and further comprising removing the fluid from the subsurface cavity using the downhole device.
3. (Original) The method of Claim 1, and further comprising removing the fluid from the subsurface cavity through the downhole device while the fluid is agitated by the fluid agitator.
4. (Original) The method of Claim 1, wherein the fluid agitator comprises a plurality of arms that are outwardly extendable.
5. (Original) The method of Claim 4, wherein agitating the fluid comprises rotating the arms at a rate of no more than ten revolutions per day.

6. (Original) The method of Claim 4, wherein agitating the fluid comprises rotating the arms at a rate of no more than five revolutions per day.

7. (Original) The method of Claim 4, wherein agitating the fluid comprises rotating the arms at a rate of no more than one revolution per day.

8. (Original) The method of Claim 1, wherein the fluid agitator comprises a plurality of blunt arms that are outwardly extendable.

9. (Currently Amended) A method for preventing formation of sludge in a subsurface cavity, comprising:

positioning an inlet of a pump via a well bore into a cavity formed underground, the cavity including fluid and a plurality of particles in the fluid, the cavity having a transverse dimension exceeding a transverse dimension of the well bore;

agitating the fluid; and

removing the fluid.

10. (Original) The method of Claim 9, wherein the inlet of the pump is coupled to a plurality of arms that are operable to extend radially within the cavity, and wherein agitating the fluid comprises extending the arms and rotating the arms about a longitudinal axis of the pump.

11. (Original) The method of Claim 10, wherein agitating the fluid comprises rotating the arms at a rate of no more than ten revolutions per day.

12. (Original) The method of Claim 10, wherein agitating the fluid comprises rotating the arms at a rate of no more than five revolutions per day.

13. (Original) The method of Claim 10, wherein agitating the fluid comprises rotating the arms at a rate of no more than one revolution per day.

14. (Original) The method of Claim 9, wherein the inlet of the pump is coupled to a plurality of blunt arms that are operable to extend radially within the cavity, and wherein agitating the fluid comprises extending the blunt arms and rotating the blunt arms and rotating the blunt arms about a longitudinal axis of the pump.

15. (Original) The method of Claim 9, wherein the act of removing the fluid is performed while agitating the fluid.

Applicant : Joseph A. Zupanick  
Serial No. : 10/687,362  
Filed : October 14, 2003  
Page : 5 of 9

Attorney's Docket No.: 17601-005003 / BB  
067083.0283

16. (Original) The method of Claim 9, wherein the pump is a suction-rod pump.
17. (Original) The method of Claim 9, wherein the pump is a downhole pump.

18. (Currently Amended) A method for removing particulate laden fluid from a subterranean zone, comprising:

lowering an inlet of a pump through a well bore into a cavity formed in a subterranean zone, ~~the cavity extending radially from the well bore~~ the cavity having a transverse dimension greater than a transverse dimension of the well bore;

radially extending within the cavity a plurality of arms coupled to the pump inlet;

positioning the inlet in the cavity by resting the arms on a floor of the cavity;

collecting particulate laden fluid in the cavity;

rotating the arms about a longitudinal axis of the pump; and

removing the particulate laden fluid with the pump.

19. (Original) The method of Claim 18, wherein the arms are rotated at a rate of no more than ten revolutions per day.

20. (Original) The method of Claim 18, wherein each of the arms are blunt.

21. (Previously Presented) The method of Claim 1, wherein the downhole device is positioned in the subsurface cavity via a well bore having a first diameter, and the downhole device is changeable to a diameter that is greater than the first diameter.

22. (Previously Presented) The method of Claim 10, wherein the extended arms exceed a diameter of the well bore.

23. (Previously Presented) The method of Claim 18, wherein the extended arms exceed a diameter of the well bore.